

WORKING WITH MODEM7 (Part 2)

by Buzz Rudow

--Editing Modem-7 Source with Spellbinder--

The problem with using wordprocessors to edit ASM source files is that most wordprocessors use control characters in their files to mark paragraphs, text enhancement, etc. Most wordprocessors have a special mode to allow them to work ASM files, however.

I'd like to be able to tell you how to use the WordStar or Memorite wordprocessors, or the Scope or ED text processors. Problem is, I haven't used them. For the moment, I'll just explain what edits need to be made. You'll need to translate the instructions for use with your processor.

For Spellbinder, the first thing to do is open up your screen. From Spellbinder's command mode, type "L159", or whatever is two times your screen width, minus one. That stops the wrapping of lines in the source program.

There are two ASM files that we're interested in, M7VEC.ASM and M7NAM.ASM. M7VEC is the overlay that sets up parameters to suit your I/O board and your modem. While I've named it M7VEC, there isn't any reason it can't be used for any other I/O board. You just have to edit some items that, later in this article, I say you can leave alone for a Vector. M7NAM is the phone number overlay. It can be used only with a modem that does automatic dialing.

-Editing M7VEC.ASM-

The M7VEC.ASM file is about four printed pages long. The only areas that I have edited are the following:

PORT:	EQU	04H	;VECTOR serial output port	
MODCTL1:	EQU	PORT+1	;Modem control port	
MODDATP:	EQU	PORT	;Modem data port	
MODCTL2:	EQU	PORT+1	;Modem control port	
MODRCVB:	EQU	02H	;Your bit to test for receive	
MODRCVR:	EQU	02H	;Your value when receive ready	
MODSNDB:	EQU	01H	;Your bit to test for send	
MODSNDR:	EQU	01H	;Your value when send ready	
;				
PMMIMODEM:	DB	NO	;yes=PMMI S-100 Modem	103H
SMARTMODEM:	DB	YES	;yes=HAYES Smartmodem, no=non-PMMI	104H
TOUCHPULSE:	DB	T	;T=touch, P=pulse (Smartmodem-only)	105H
CLOCK:	DB	40	;clock speed in MHz x10, 25.5 MHz max.	106H
			;20=2 Mhz, 37=3.68 Mhz, 40=4 Mhz, etc.	
MSPEED:	DB	1	;0=110 1=300 2=450 3=600 4=710 5=1200	107H
			;6=2400 7=4800 8=9600 9=19200 default	

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```

BYTDLY:      DB      1      ;0=0 delay 1=10ms 5=50 ms - 9=90 ms 108H
              ;default time to send character in ter-
              ;minal mode file transfer for slow BBS.
CRDLY:       DB      1      ;0=0 delay 1=100 ms 5=500 ms - 9=900 ms 109H
              ;default time for extra wait after CRLF
              ;in terminal mode file transfer
;
CLREOS:      CALL     JMP$ILPRT      ;      195H
              DB      16,0,0,0,0    ;      198H
              RET                      ;      19DH
;
CLRSCRN:     CALL     JMP$ILPRT      ;      19EH
              DB      04,0,0,0,0    ;      1A1H
              RET                      ;      1A6H
;
SYSVER:      CALL     JMP$ILPRT      ;      1A7H
              DB      'Version for Vector Graphics 4 Mhz Port 4'
              DB      CR,LF,0
              RET

```

The above code is not adjacent in the M7.ASM file, though the sequential order is equivalent. You'll have to look for the specific lines. Here's how to figure out what to specifically put into the values for these parameters.

The first value addressed is:

```
PORT:      EQU      04H      ;VECTOR serial output port
```

The value for PORT will be 4, 6, or 8 on most Vectors. See last month's newsletter for a discussion of ports and I/O boards.

In all systems I've worked with, the next three parameters MODCTL1, MODDATP, and MODCTL2 stay the same, that is, don't need editing.

```

MODCTL1:    EQU      PORT+1      ;Modem control port
MODDATP:    EQU      PORT      ;Modem data port
MODCTL2:    EQU      PORT+1      ;Modem control port

```

The next four bytes:

```

MODRCVB:    EQU      02H      ;Your bit to test for receive
MODRCVR:    EQU      02H      ;Your value when receive ready
MODSNDB:    EQU      01H      ;Your bit to test for send
MODSNDR:    EQU      01H      ;Your value when send ready

```

work for any Vector, and don't need editing. For a SOL, make MODRCVB and MODRCVR equal to xx, and make MODSNDB and MODSNDR equal to xx.

Set the next two values:

```

PMMIMODEM:  DB      NO      ;yes=PMMI S-100 Modem      103H
SMARTMODEM: DB      YES     ;yes=HAYES Smartmodem, no=non-PMMI 104H

```

to YES or NO, depending on the type modem you're using. Most modems use the Hays protocol. If you are hardwiring, i.e., connecting two computers directly together, set both values to NO.

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The next three values to be concerned with are:

```
TOUCHPULSE:  DB      ^T      ;T=touch, P=pulse (Smartmodem-only)      105H
CLOCK:       DB      40      ;clock speed in MHz x10, 25.5 MHz max.      106H
                                     ;20=2 Mhz, 37=3.68 Mhz, 40=4 Mhz, etc.
MSPEED:      DB      1      ;0=110 1=300 2=450 3=600 4=710 5=1200      107H
                                     ;6=2400 7=4800 8=9600 9=19200 default
```

These don't need much explanation. Set them to suite your phone type, computer clock speed, and modem (or I/O board, for hardwire) speed.

I don't know what to do with the following two values:

```
BYTDLY:      DB      1      ;0=0 delay 1=10ms 5=50 ms - 9=90 ms      108H
                                     ;default time to send character in ter-
CRDLY:       DB      1      ;0=0 delay 1=100 ms 5=500 ms - 9=900 ms      109H
                                     ;default time for extra wait after CRLF
                                     ;in terminal mode file transfer
```

They seem to be of consequence. If anyone knows what values apply, let us know. As it is, I leave them at "1", and everything works OK.

The following set of code does not have to be edited for a Vector, but would have to have the clearscreen and clear-to-end-of-screen codes put in for non-Vectors.

```
CLREOS:      CALL     JMP$ILPRT      ;      195H
              DB      16,0,0,0,0    ;      198H
              RET              ;      19DH
;
CLRSCRN:     CALL     JMP$ILPRT      ;      19EH
              DB      04,0,0,0,0    ;      1A1H
              RET              ;      1A6H
;
SYSVER:      CALL     JMP$ILPRT      ;      1A7H
              DB      ^Version for Vector Graphics 4 Mhz Port 4^
              DB      CR,LF,0
              RET
```

When all your edits are completed, type "GD name.ASM/1/2" to save the edited file. The "/1/2" tells Spellbinder to save the file with hard carriage returns, and to make tabs out of the multiple spaces. I use a code to specify port, CPU speed, modem speed, and modem type. For instance I'd save the above file as M443H.ASM to signify port 4, 4Mh, 300 baud, Hays modem.

-Editing M7NAM.ASM-

The effect of M7NAM is to create a screen display of phone numbers that you can call by specifying a single letter. It comes up when you type CAL in response to the MODEM7 COMMAND>> prompt. This file can be edited to make a new library of telephone numbers that are just for you. There are two parts to the file; one part for long distance alternate dialing, and a second part for the actual phone number to be called.

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The first part you may wish to edit is that for the long distance alternate dialing such as MCI, SPRINT, etc. It is only used if you have such services available, but really makes life simple when you do. The applicable code is a set of two lines:

```
ALTDIAL1:DB      'xxxxxxx,.,.,,xxxxxxx,$'    ;accessed by a < character
```

```
ALTDIAL2:DB      'xxxxxxx,.,.,,xxxxxxx,$'    ;accessed by a > character
```

Each entry is 24 characters in length (between the single quote marks) and must remain that size. You'll use ALTDIAL1 by prefacing any phone number is the library with a "<", or a ">" for ALTDIAL2. The first set of x's represent the MCI, etc., number. The second set of x's represent your user number, access code, or billing number. The commas each cause a 2-second wait. The code above would therefore call a long distance service, and wait 12 seconds (6 commas) for a response, connection, or dial tone. The it would dial your access code and wait 4 seconds before proceeding.

Each entry must end with a '\$'. Fill in any character (periods are fine) after the \$ to keep number of columns to 24, i.e.,
'1234567,.,.,12345,\$.....'

The phone number library table for auto-dialing is a little further down in the code. Each entry must be 34 bytes long and only 26 (A-Z) telephone numbers are allowed. Follow the format for the library entries already in the file. (Be sure to use spaces, not tabs.)

Room has been left if your phone system requires extra characters such as:
1-313-846-6127 rather than the 313-846-6127 used in some areas.

NOTE: 'R' at the end of a number indicates a ringback system.

Use a (<) for alternate dialing system #1, and a (>) for alternate dialing System #2. Either would precede the actual number, for example:

```
DB      'A=Alan Alda.....<1-123-456-7890'    ;'A'
```

- - - - -
An further example of the code to be edited is:

```
NUMBLIB:DB      '----5---10---15---20---25---30---34'  
DB      'A=Bob Robesky.....1-209-227-2083'    ;'A'  
DB      'B=Byron McKay.....1-415-965-4097'    ;'B'
```

Again, save this file by typing "GD name.ASM/1/2. I've used M7NAM.ASM as my file name.

--Using ASM to Create the Modem-7 HEX Files--

Let's suppose you've named your wordprocessor file M443H.ASM. Assemble the file by typing:

ASM M443H

Note that you don't use a suffix. There is a suffix, but it isn't what you are use to. By just typing the name, you create a HEX and a PRN (print) file on the same drive that the MODEM source is on. If you wish to experiment with suffixes, look it up in the CP/M document for ASM.

Don't use the ZSM assembler supplied on the Vector. It won't work. I've put ASM.COM on Library disk 1907.

Assemble M7NAM.ASM by typing:

ASM M7NAM

--Using DDT to Create a customized Modem-7 Command File--

You've got to have an existing COM file of Modem7 to be able to create your customized version. Let's assume you have the M719.COM off library disk 1907. Your HEX file is named M443H.HEX. Suppose you want the resultant customized COM file to be named M7.COM. Perform the following (underlines are what you type, the rest is program prompt). I've put DDT.COM on library disk 1907, also, in case you lost, or didn't get a copy with your CP/M system.

```
>DDT M719.COM
DDT VERS 2.2
NEXT PC
4600 0100
-IM443H.HEX
-R
NEXT PC
4600 0000
-GO
A>SAVE 69 M7.COM
```

The same procedure is used for modifying the phone library. Perhaps you can do them both at the same time, but I haven't. This works. Since you now have a M7.COM file generated with your customized parameters, merge the phone list by typing:

```
>DDT M7.COM
DDT VERS 2.2
NEXT PC
4600 0100
-IM7NAM.HEX
-R
NEXT PC
4600 0000
-GO
A>SAVE 69 M7.COM
```

-Conclusion-

If you members know the ports, speeds, or any answers for any of the modifiable code that will be of use to owners of equipment other than Vector, drop me a note with that information and I'll publish it. Some of you probably understand all this much better than I. If you can correct my errors, or educate me further, please do.

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COMPUTERS AND THEE

by Tammy Rudow

All my life, for as long as I can remember, I have been surrounded by computers. No, I did not have to contend with the "Your brother did this" or "Your sister did that, why can't you?" rigamarole. I got to compete with "Spell-binder can do this or Power can do that". And the real sad thing is that you can't go and blow up at a computer like you can at your brother or sister because the computer will blow it right back at you and then you're really in trouble!

In all faith and honesty, I don't think my parents were trying to give me an inferiority complex, but when the "computer is NEVER wrong" or "computers don't lie" - it's hard not to get just a bit envious at such perfection.

So at the tender age of 10, I heard "if you can't beat 'em, join 'em" and decided to confront my competition. Piano competitions taught me how to win. At \$.25 an hour (what did I know about minimum wage?) I began to learn how to type and thus further complicate matters even more. Don't ask whose sanity my parents were more concerned with - mine or the computers!

When I was 11 years old, I decided that my typing skills were good enough to beat the competition (Victory was at hand!) by even possibly beating out my mother's typing skills (HA!). It turned out to be a disaster similar to the Chicago-Dallas game: EMBARRASSMENT! Over the years my typing skills have improved: I'm now up to \$5.00 an hour, but my dislike of computers hasn't. Who said life isn't fair? Anyway, back to my story.

When I was 13 (do-wopp, do-wopp), my dad decided that I could work with one of his mail-list programs "To help your mother". Why couldn't I just clean house like any other NORMAL teenager? Now that we had two people working - we needed two computers. Well, you might know - along comes CP/M. To this day, I refuse to work CP/M unless Mom or Dad is sitting next to me. Well, with one system working MDOS and the other operating CP/M, things were bound to get confused. And so they did. Because I was never guaranteed that I would get to work the same terminal to do my job, I had to learn both systems and to learn how to keep them apart. (Mission Impossible)

My job was to type in names and addresses into the computer. Under Dad's BASIC programming, I simply typed name, address, city, state and zip, RETURN. And I could continue on in this fashion. In CP/M, you must type name RETURN, address RETURN, city RETURN, state RETURN, and zip RETURN. And THEN I had to tell it to save the stuff! (S) If I didn't tell it to save it, then I would lose all that I typed in. In MDOS, if I told the computer to SAVE, then it would blow up on me like I had dealt it some sort of intelligence insult! Needless to say, I would get the two confused and backwards and wind up with garbage thrown at me.

Even though computers have made man's life simpler, I firmly believe that they are the "8th deadly sin". I am now a senior in high school and I rarely if ever type on a computer. My parents had mercy on me and kept the IBM Selectric for my term paper useage.

If you're wondering what the whole point to all this is, here it is: Beat your enemy, then ignore him. Works every time.

P.S. And now I gotta go type this thing in under SPELLBINDER!

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LETTERS

Buzz - A few notes of interest for the MUG readers:

Floppy Disk Availability

Users needing floppy diskettes should consider Smart Data Inc as a source. I've purchased SS double density and DS quad density 16-sector Verbatim disks from them twice within the last year. Delivery was 5 days on the first order, and 2-weeks on the second. Their catalog Volume III No. 2 also lists 16-sector disks by Dyson, Maxell, TDK, and Elephant. Prices range down from \$42.95 for Dyson or Verbatim DS 96 TPI. Call direct 312/966-2033 (information line) or 800/336-6875 (order line), or write for catalog: Smart Data Inc., 6302 Oakton Street, Morton Grove, Illinois 60053.

Tandon Drive Tip

After a batch of error messages when accessing a V4/30 Tandon floppy drive, I removed the drive and its logic control circuit board. Inspection revealed a layer of film on the index emitter and detector. These are optoelectronic devices with glass-like surfaces that detect the sector holes in the floppy disk. Careful cleaning with a moist cloth returned the drive to normal service. Apparently, the film of dirt reduces the light level and causes erratic operation. I've also performed this service on Tandon drives in Vector 5005s - without success. It seems that the V4 is more likely to accumulate dirt film because of the horizontal mounting of the drive. (I'll write a step-by-step procedure with supporting illustrations if there's enough demand from "first timers" reluctant to remove the drive and logic control board.)

BLAST Communications Program

In reference to Tom Brown's question about BLAST in Newsletter #62, I don't have any particulars but I did see a description in my Whole Earth Software Catalog. If memory serves, the BLAST program was listed as being available for a number of different CPUs including the Z80, so it should be available for the Vector.

MODEM7 vs. MITE

In the same article, you wondered why anyone would buy a commercial communication program instead of using MODEM7. My answer is convenience, both in setting up the program on the Vector and in operation.

Obtaining the MODEM7 program and overlays is difficult for the typical Vector user. In fact, I'd been using a Vector for several years before discovering that I wasn't the only Vector owner! Then there's the problem of either converting the .ASM file to assemble under Vector's ZSM, or porting the public domain LASM program into the Vector before it has communications capability. It's really a cart before the horse situation; however, with organizations such as MUG this should not be a problem.

I purchased MITE (c) Mycroft Labs about a year ago, and recommend it without reservation. It was the MITE program that introduced me to public domain software, because my version of Vector CONECT did not support the XMODEM file transfer protocol. I even downloaded the MODEM7 Vector overlays from Tom Sanderson's New Mexico RCPM. I've glanced at the MODEM7 documentation and agree that it should do the job, but it certainly looks harder to use than MITE. For an infrequent communicator like me, MITE is perfect. I can go for several months without using the program and still operate solely from the menu. In fact, MITE is easier to use than CONECT (and MITE has many more features I haven't tried). My interest is in the communication, and not in the communication program.

Of course, the real difference between MODEM7 and commercial programs is monetary. However, at \$150 I consider MITE to be the best software value I ever received.

Henry Green, 223 Hadleigh Road, Bolingbrook, IL 60439 - 312/739-3645

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MICROPOLIS 1015 DRIVES

These Micropolis 1015 drives plug right into a Vector Graphic System B (or MZ), and are the basis of all Micropolis marketed sub-systems. If you're currently running Micropolis drives, we're pretty sure we can produce a version of the product to suit your requirements. If you aren't sure of your requirements, call Lynn at (205) 881-1697. She knows the questions to ask to be able to tell you how the product applies to your situation. Drives can be used as replace-

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ments, or as add-ons that can be configured to give you a system that accesses up to four drives online at the same time.

To make sure that you're satisfied that they work with your system, DAMAN offers the 30-day unconditional guarantee. Try them out. If you don't like them, return them for your money back, less shipping.

The prices for these drives are:

1015 BARE DRIVE (no P/S or cabinet, as in VG System B)	\$150
SINGLE-DRIVE SUBSYSTEM (single 1015 installed in cabinet with P/S)	\$225
DOUBLE-DRIVE SUBSYSTEM (two 1015 drives installed in cabinet with P/S) . .	\$400
INTERCONNECTING DATA CABLES	Depends on Setup

CP/M SOFTWARE INVENTORY CLEARANCE SALE

DAMAN still has a lot of the software available that was advertised for clearance last month. There are some real bargains here. The INFO-STAR data base manager is a quality item. It's priced at about half of the list, and conversion to the Micropolis/Vector Graphic 16-hard-sector format is included. The following prices are cash, check or money order. Prices are also limited to inventory in stock, in either the M/VG 5 1/4" or 8" format. VISA/Mastercard accepted at 3% additional charge. Call Lynn at (205) 881-1697.

Games	Business Applications
ORBQUEST [40].	DAY MASTER (calendar maint.) [200] \$50
MILLIONAIRE [70]	SUPERCALC I (spreadsheet) [195]. \$127
ZORK I, II, or III [50]. . . .	TOTAL ACCT PARTNER [395] \$200
DEADLINE, SUSPENDED, WITNESS	OPTIMIZER [200]. \$70
STARCROSS [50]	INFO-STAR (Data Base Mgr) [495]. \$250
ANALIZA II [50].	WORD-STAR (wordprocessor) [350]. \$210
MORTON'S FORK, BALROG [40] .	CALC-STAR (spreadsheet) [195]. . \$110

CLASSIFIED

WANTED - Information on using Word Star patch codes to operate the sheet feeder on a Vector Graphic 7700 system printer. It involves rolling the platen backwards a number of lines -- probably about 45 lines -- then forward again, for something like 25 to 30 lines.

Frank Bell, Jr., P.O. Box 8, Tuxedo NC 28784, (704) 593-7446.
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WANTED - A genealogy (family tree) program. I'd prefer it to be in Micropolis Basic. However, information on any source code, in any language/operating system, would be appreciated. If you don't have it, but know where I could get it, please let me know.

Matthew Lewis, 4327 Lloyd, Kansas City KS, 66103 (913) 831-1755.
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FOR SALE - Memory Boards for sale from Vector Graphic MZ. 16K static RAM boards for \$85 each or 2 for \$150. Also 8K static RAM boards for \$45 each or 2 for \$75. All in good working condition.

Dr. Mark I. Levy. Mornings at (602) 992-8199; evenings at (602) 483-0949.
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WANTED - Information on fixing SOL 20 whose keyboard doesn't respond to upper or lower case X, H, or 8. Suspect ROM U18. Does anyone have replacements available, or have code such that I could have an EPROM programmed?

Stan Lapin, 12 Bushy Ridge Rd, Westport CN 06880 (203) 227-4788.
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*
* For Assistance with general information, MUG/Vector Graphic, DAMAN hardware *
* & software, Micropolis Basic, Basic/z, Micropolis drives & Micropolis parts *
*
* Call Lynn at (205) 881-1697 during the Central Times of 9 AM to 5 PM. Buzz *
* is sometimes around in the evening (Lynn will know) and from 9 - 12 on Sat. *

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